

Notice of Allowability

Application No.

10/561,471

Examiner

LaTanya Bibbins

Applicant(s)

MARTENS ET AL.

Art Unit

2627

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to preliminary amendment filed December 20, 2005.
2. ☒ The allowed claim(s) is/are 1-13.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

WAYNE YOUNG
SUPERVISORY PATENT EXAMINER

DETAILED ACTION

Preliminary Amendment

Receipt is acknowledged of the preliminary amendment filed on December 20, 2005. In the amendment, claims 4, 5, 9, and 10 were amended. Currently claims 1-13 are pending.

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

EXAMINER'S AMENDMENT

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

The application has been amended as follows:

In the Abstract:

Replace the abstract with the following:

Abstract of the Disclosure

A writable optical record carrier comprising a plurality of recording layers L0, . . . , Ln-1 separated by a spacer material, each recording layer comprising an optimum

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power calibration area having a first portion with an average reflection value representative of a recorded layer and a second portion with an average reflection value representative of an unrecorded layer, a method, and an apparatus for forming optimum power calibration areas on such a writable optical record carrier are presented. The optimum power calibration areas partially overlap such that the optimum power calibration areas of each pair of consecutive recording layers form a step, and the first portions of said plurality of recording layers have the form of a staircase. Each step formed by a pair of consecutive recording layers k , $k+1$ has a preferred minimum step size.

Comments:

The abstract was amended for purposes of clarity.

Allowable Subject Matter

3. **Claims 1-13** are allowed.
4. The following is an examiner's statement of reasons for allowance:

Regarding claims 1-13, none of the references of record, alone or in combination, suggest or fairly teach the limitations of independent claims 1, 6, and 11 in such a manner that a rejection under 35 U.S.C. 102 or 103 would be proper. The prior art fails to disclose a writable optical disc, method of forming optimum power calibration areas on a writable optical disc, or an apparatus arranged for recording data on a writable optical disc

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comprising a plurality of recording layers L_0, \dots, L_{n-1} separated by a spacer material each time, each of the recording layers comprising an optimum power calibration area, wherein at least the optimum power calibration areas of the layers L_0, \dots, L_{n-2} or L_1, \dots, L_{n-1} have a first portion with an average reflection value representative of a recorded layer, the optimum power calibration areas of each recording layer L_0, \dots, L_{n-1} have a second portion with an average reflection value representative of an unrecorded layer, and **said optimum power calibration areas partially overlap such that the first portions of each pair of consecutive recording layers L_k, L_{k+1} form a step with a minimum step size of $w_{k,k+1}$ of**

$$w_{k,k+1} = 2\varepsilon + \frac{NA}{\sqrt{n_m^2 - NA^2}} \cdot \Delta_{k,k+1}$$

wherein ε denotes the maximum radial misalignment of each recording layer, $\Delta_{k,k+1}$ denotes the thickness of the spacer material between the consecutive layers L_k and L_{k+1} , and n_m is the refractive index of the spacer material, and wherein the first portions of said plurality of recording layers have the form of a staircase.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Citation of Relevant Prior Art

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Narumi et al. (US PGPub Number 2003/0185121 A1) disclose an optical information recording medium including a first information recording layer on which information is to be recorded by laser light; and a second information recording layer on which information is to be recorded by the laser light which has passed through the first information recording layer. The first information recording layer includes at least one of a reproduction-only area and a recording and reproduction area. The second information recording layer includes a test recording area. At least one of the reproduction-only area and the recording and reproduction area, and the test recording area is located such that one of the reproduction-only area and the recording and reproduction area includes an area of the first information recording layer through which the laser light for recording information in the test recording area passes.

Nakano (US PGPub Number 2002/0136122 A1) discloses an optical information record medium provided with recording power test areas respectively in the second and deeper information recording layers, separately from user data recording areas. Those recording power test areas are used for testing a recording power of the recording laser beam. Further, before recording on a user data recording area in a second or deeper information recording layer, the recording power test area in the recording layer in question is used to test the recording power, to obtain a reference power and a level of a return beam at that time. Then, in recording on an arbitrary

location in the user data area of the recording layer in question, the optimum recording power for the mentioned arbitrary location is calculated using a level of a return beam detected in recording on a location in the neighborhood of the mentioned arbitrary location, the reference power obtained in the test of the recording power, and the level of the return beam obtained at that time. The power of the recording laser beam is controlled such that recording on the mentioned arbitrary location is performed with that optimum recording power.

Lee et al. (US PGPub Number 2006/0203648 A1) disclose a method of recording data on an information storage medium including a plurality of recording layers, each having a user data area, on which data is recordable by a pickup. Data is recorded in the order of recording layers from a layer closest to the pickup to a layer farthest from the pickup, and a recordable region in a user data area of a recording layer on which data is to be recorded is smaller than a user data area in a recording layer between the pickup and the recording layer on which the data is to be recorded. Each recording layer contains a recordable region in a user data area and a optimum power control (OPC) area in order to maintain the same recording characteristics between the plurality of recording layers.

Shoji et al. (US PGPub Number 2005/0232108 A1) disclose an information recording medium which comprises a plurality of recording layers and a first disc information area for storing parameters relating to access to the plurality of recording layers and formats relating to the plurality of recording layer. The first disc information

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area is provided in a first recording layer, which is one of the plurality of recording layers.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LaTanya Bibbins whose telephone number is (571) 270-1125. The examiner can normally be reached on Monday through Friday 7:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne Young can be reached on 571 272-7582. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


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SUPERVISORY PATENT EXAMINER